RAVEN EYE I (RE-I)

Unmanned Multi-Mission Stabilized Payload

NORTHROP GRUMMAN
Electronic Systems

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VENDOR DESCRIPTION

RE-I is a family of advanced, off-the-shelf EO payloads designed for day and night operation, including surveillance, target location and marking, and laser rangefinding/ designation. It is based on the design of the IAI-TAMAM Plug-in Optronic Payload (POP) and incorporates Northrop Grumman's expertise in sensors, image processing and lasers. Over 400 payload systems have been supplied for different types of fixed- and rotary-wing platforms. The RE-I EO/IR sensor configuration is in production and is currently flying on the Shadow 200 US Army TUAV and the Pioneer USN UAV. RE-I is a gyro-stabilized, dual sensor, single Line Replaceable Unit (LRU) payload. In addition to the high-resolution, large format MWIR FLIR and color CCD TV, Northrop Grumman is adding a provision for a high-performance laser designator and a real-time image processing and enhancement card. RE-I is based on a unique plug-in sensors "Slice" module that can be easily replaced in the field in under 5 minutes. The plug-in "Slice" is available in several config-urations incorporating sensors such as FLIR, color TV, Laser Rangefinder and Laser Marker.

RE-I's unique 2-axis gimbal design provides more volume for sensor packaging while maintaining total payload weight at <35 lbs, LOS stabilization level at <35 micro-radians, and TLE at <35 meters.

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Business Category: Large Business

EOIRLD

Hardware		Gimbal
RF Frequency: N/A	Operating Temp.: -30°C to +55°C	Height: 15" Weight: 16 kg
Power: <140 W	Storage Temp.: -40°C to +71°C	Stabilization: <35 µrad
Weight: Total 35 lbs (Single LRU)	Interface: RS-422/RS-232, RS-170 or 14-bit digital	Pointing Accuracy: <3 mrad
Dimensions: 260 mm dia. x 380 mm height	Bandwidth Required: N/A	Angular Speed: 0-60°/sec
Internal Volume: <0.5 ft^3	TCDL Compatibility: Yes	Azimuth Coverage: 360°
Cooling: Ambient air	MTBF: >800 hrs	Elevation Coverage: +40° to -110° from horizon
LOS Stabilization: <35 µrad	MTTR: .1 hrs	Slew Rate Azimuth: 0-60°/sec
Auto Video Tracker: Yes	Maintainability: 2-level BIT to LRM level	Slew Rate Elev. Coverage: 0-60°/sec
Operating Altitude: 0 ft to 15,000 ft AGL	Pd: 90% @ 7 km	TLE: <35 meters
Operating Speed: 0 knots to 150 knots	Pr: 90% @ 5 km	ATC or ATR or ATI: Provision for

Electro-Optical (EO)	Infrared (IR)	Laser RF and Marker (Available) Laser Designator (Growth)
Type: Zoom CCD	Type: InSb 3-5 µm IRFPA, NETD <20mK	Eye-safe LRF Pulse: 1-5 pps
Resolution: 600 TVL	Resolution: 320x240 or 640x480	Pulse Energy: 20 mJ (@1.57 µm
Range: 7 km Target Recognition	Range: 5 km Target Recognition	Range: 8 km
Angular Coverage: Same as gimbal	Angular Coverage: Same as gimbal	Angular Coverage: Same as gimbal
Zoom Rate: 32:1 (16:1 optical, 2X elec. zoom)	Cooling Method: Stirling cycle cooler	Beam Divergence: <1 mrad
Modes of Operation: N/A	Modes of Operation: N/A	Laser Marker Pulse: CW
Target Size: Std. NATO (2.3x2.3 meters)	Target Size: Std. NATO (2.3x2.3 meters)	Pulse Power: 2W @ 0.83 µm
Field of View: 20°-1.3° (0.65° with 2X zoom)	WFOV: 29° x 22°	Range: 8 km
Sensitivity: 1 lux	MFOV: 9° x 7°	Boresight with FLIR/TV: <0.5 mrad
Color or B/W: Color	NFOV: 2° x 1.6° (1° x 0.8° SNFOV)	TLE: <35 meters